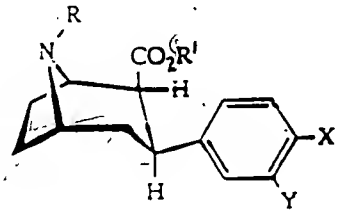
In the Claims:

Please cancel claims 2, 3, 8, 9, 31, and 35 without prejudice.

1. (Amended) An iodinated neuroprobe for mapping monoamine reuptake sites, the iodinated neuroprobe being of the formula:



wherein

R = [a C_nH_{2n+1} group where n=0-6, an alkenyl group,] a monofluoroalkyl group including ^{n}F where n=18 or 19 [, or a $^{m}C_nH_{2n+1}$ group where n=1-6 and where m=11 or 14 for at least one ^{m}C];

R′ = a C_nH_{2n+1} group where n=0-6 [, a p-iodophenylmethyl group, a p-iodophenylethyl group, a phenylmethyl group, or a phenylethyl group];

X = an isotope of F, an isotope of Cl, an isotope of Br, an isotope of I, CH_3, or $Sn(R"_1R"_2R"_3)$;

$R"_1$ = a C_nH_{2n+1} group where n=1-6, or an aryl group;

$R"_2$ = a C_nH_{2n+1} group where n=1-6, or an aryl group;

$R"_3$ = a C_nH_{2n+1} group where n=1-6, or an aryl group; and

Y = H [only if X is an isotope of I, or R′ is a p-iodophenylmethyl group, or R′ is a p-iodophenylethyl group, else Y= an isotope of I].

51. (Amended) An iodinated neuroprobe for mapping monoamine reuptake sites, the iodinated neuroprobe being of the formula:

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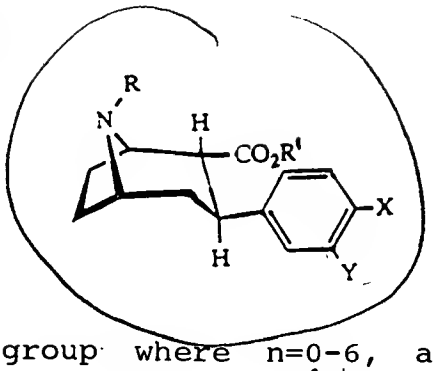

wherein

R = [a C_nH_{2n+1} group where n=0-6, an alkenyl group,] a monofluoroalkyl group including ^{n}F where n=18 or 19 [, or a $^{m}C_nH_{2n+1}$ group where n=1-6 and where m=11 or 14 for at least one ^{m}C];

R′ = a C_nH_{2n+1} group where n=0-6 [, a p-iodophenylmethyl group, a p-iodophenylethyl group, a phenylmethyl group, or a phenylethyl group];

X = an isotope of F, an isotope of Cl, an isotope of Br, an isotope of I, CH_3, or $Sn(R"_1R"_2R"_3)$];

$R"_1$ = a C_nH_{2n+1} group where n=1-6, or an aryl group;

$R"_2$ = a C_nH_{2n+1} group where n=1-6, or an aryl group;

$R"_3$ = a C_nH_{2n+1} group where n=1-6, or an aryl group;

Y = H [only if X is an isotope of I, or R′ is a p-iodophenylmethyl group, or R′ is a p-iodophenylethyl group, else Y= an isotope of I].

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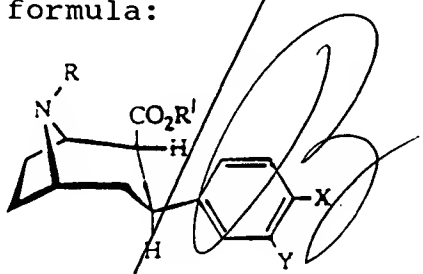
29. (Amended) A kit for preparing an iodinated neuroprobe for mapping monoamine reuptake sites, the kit comprising:

a precursor of the formula:



wherein

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R = [a C_nH_{2n+1} group where n=0-6, and alkenyl group,] a monofluoroalkyl group or H;

R′ = a C_nH_{2n+1} group where n=0-6 [, a p-iodophenylmethyl group, a p-iodophenylethyl group, a phenylmethyl group, or a phenylethyl group];

X = [F, Cl, Br,] I or $Sn(R"_1R"_2R"_3)$;

$R"_1$ = a C_nH_{2n+1} group where n=1-6, or an aryl group;

$R"_2$ = a C_nH_{2n+1} group where n=1-6, or an aryl group;

$R"_3$ = a C_nH_{2n+1} group where n=1-6, or an aryl group; and

Y = H [only if X is I, or R′ is a p-iodophenylmethyl group, or R′ is a p-iodophenylethyl group, else Y = I]; and

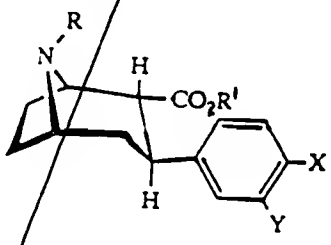
an oxidizing agent,

wherein the precursor and the oxidizing agent are to be reacted in the presence of a radioisotope source.

32. (Amended) The kit of claim 29 wherein the radioisotope source is a reagent [containing ^{18}F] of the formula [$FC_nH_{2n}X$] $^{18}FC_nH_{2n}L$ where n=0-6 and [X] L is a leaving group.

33. (Amended) A kit for preparing an iodinated neuroprobe for mapping monoamine reuptake sites, the kit comprising:

a precursor of the formula:



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wherein

R = [a C_nH_{2n+1} group where n=0-6, and alkenyl group,] a monofluoroalkyl group or H;

R′ = a C_nH_{2n+1} group where n=0-6 [, a p-iodophenylmethyl group, a p-iodophenylethyl group, a phenylmethyl group, or a phenylethyl group];

X = [F, Cl, Br,] I or $Sn(R"_1R"_2R"_3)$;

$R"_1$ = a C_nH_{2n+1} group where n=1-6, or an aryl group;

$R"_2$ = a C_nH_{2n+1} group where n=1-6, or an aryl group;

$R"_3$ = a C_nH_{2n+1} group where n=1-6, or an aryl group; and

Y = H [only if X is I, or R′ is a p-iodophenylmethyl group, or R′ is a p-iodophenylethyl group, else Y = I]; and

an oxidizing agent,

wherein the precursor and the oxidizing agent are to be reacted in the presence of a radioisotope source.

36. (Amended) The kit of claim 33 wherein the radioisotope source is a reagent [containing ^{18}F] of the formula [$FC_nH_{2n}X$] $\underline{^{18}FC_nH_{2n}L}$ where n=0-6 and [X] L is a leaving group.

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